

Abstract

The invention describes a new calcium phosphate cement powder, whose composition can best be described over the Ca/P molar ratio range of 1.35 to 1.40, most preferably 1.39, and whose two components were prepared by wet chemical synthesis procedures. One component is chemically-synthesized, bi-phasic alpha-TCP ($\text{Ca}_3(\text{PO}_4)_2$, 95 wt%) + HA ($\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$, 5 wt%) powder, while the second component is again a chemically-synthesized, single-phase DCPD ($\text{CaHPO}_4 \cdot 2\text{H}_2\text{O}$) powder. A setting solution ($\text{Na}_2\text{HPO}_4 \cdot 2\text{H}_2\text{O}$) is used to form a self-setting calcium phosphate cement from the powder mixture. This cement can be used as bone filler or bone substitute in applications, which require higher rates of resorption.